AMENDMENTS

In the claims

Please cancel claims 1-7 and 15 without prejudice.

8. (Amended) A method of decoding an array composition comprising

a) providing an array composition comprising:

i) a substrate with a patterned surface comprising discrete sites; and

ii) a population of microspheres comprising at least a first and a second subpopulation, wherein each subpopulation comprises a bioactive agent;

wherein said microspheres are randomly distributed on said surface;

b) adding a plurality of decoding binding ligands to said array composition to identify the location of at least a plurality of the bioactive agents.

13. (Amended) A method of determining the presence of a target analyte in a sample comprising:

a) contacting said sample with a composition comprising:

i) a substrate with a patterned surface comprising discrete sites; and

ii) a population of microspheres comprising at least a first and a second subpopulation each comprising a bioactive agent and do not comprise an optical signature;

wherein said microspheres are randomly distributed on said surface such that said discrete sites contain microspheres; and

b) determining the presence or absence of said target analyte.

14. (Amended) A method of determining the presence of a target analyte in a sample

comprising:

a) contacting said sample with a composition comprising:

i) a substrate with a surface comprising discrete sites; and

ii) a population of microspheres comprising at least a first and a second subpopulation each comprising:

1) a bioactive agent; and

2) an identifier binding ligand that will bind a decoder binding ligand such that the identification of the bioactive agent can be elucidated;

wherein said microspheres are randomly distributed on said surface such that said discrete sites contain microspheres; and

b) determining the presence or absence of said target analyte.

Please add the following new claims:

- -19. A method according to claim 16, wherein said energy is dipping said substrate into said particles.

20. A method according to claim 19, wherein said substrate is a fiber optic bundle.

21. A method according to claim 8, 13 or 14, wherein said substrate is selected from the group consisting of glass and plastic.

22. A method according to claim 8, 13 or 14, wherein said substrate is a fiber optic bundle.

23. A method according to claim 8, 13 or 14, wherein said bioactive agent is selected from the group consisting of nucleic acids and proteins.

24. A method according to claim 13 or 14, wherein said target analyte is a nucleic acid.

25. A method according to claim 14, wherein said decoder binding ligands comprise labels.

26. A method according to claim 8 or 14, wherein said decoder binding ligands are nucleic acids.

27. A method according to claim 8 or 14, wherein said identifier binding ligands are nucleic acids.

28. A method according to claim 8 or 14, wherein said identifier binding ligands are nucleic acids and said decoder binding ligands are nucleic acids, wherein said identifier binding ligands and said decoder binding ligands comprise substantially complementary sequences.

29. A method according to claim 14, further comprising:

c), adding a plurality of decoding binding ligands to said array composition to identify the location of at least a plurality of the bioactive agents.

30. A method according to claim 8 or 29, wherein each of said decoder binding ligands comprise the same label, and wherein detection of said label results in the identification of the bioactive agent.

31. A method according to claim 8 or 29, wherein a first population of said plurality of decoder binding ligands comprises a first label and a second population of said decoder